Northern Region
News

A Newsletter for Employees and Retirees **A Special Edition Summarizing the 1994 Fire Season** ISSUE 12 December 1994

1994 Time of Transition

Post Fire Response

Fire has played a role in shaping the West as indelibly as floods have formed the Midwest and hurricanes the South. The fire season of 1994 provided us with an indication of how influential this force has been in shaping the character of forests and grasslands in the Northern Rockies.

There were about 4,900 fires within the Northern Region during 1994, affecting over 300,000 acres. National Forests in the Region were affected by nearly 2,000 fires which burned just under 195,000 acres. Forested lands in the western portion of Montana and north-central Idaho were most heavily affected. Although the 1994 fires affected less than one-half of one percent of National Forest System lands in the Northern Region, the events and possible effects of this fire season will influence our fire management actions as well Forest Service program priorities for the next decade. Our **Post Fire Evaluation and Characterization Report** (November, 1994) provides a summary of the fires, and an initial assessment of considerations that will influence our post fire management actions.

Post-fire activities and treatments for the Region are guided by priorities set in our **1994 Post-Fire Strategy** (September, 1994). These are to:

1. Protect basic soil and water resources affected by fires or suppression activities.

2. Ensure public health and safety, protect facilities or other investments.

3. Expedite small (less than 1 MMBF) salvage projects on fires consistent with Forest Plan management direction. Salvage sales will be designed using our experience and state-of-the-art management guidelines. These projects should assist in meeting short-term social and economic needs within the next 6 - 12 months.

4. Evaluate the larger fires to determine long-term needs. Post-fire treatments will be designed to help us demonstrate ecosystem management principles and meet Forest Plan direction. These more complex treatments and timber salvage projects will be designed to accomplish multiple objectives.

One of the most important opportunities generated for us by the 1994 fire season is the challenge to apply ecosystem management principles and coordinate our efforts on a broad scale. In evaluating each fire we are considering historic characteristics of the areas burned, the current condition of the landscape, Forest Plan management direction, and the expectations of people before developing specific proposals.

As we think back over the 1994 fire season, certain aspects - the camaraderie, interagency teamwork, enthusiasm and accomplishments - provide us with a sense of great pride. Other aspects, such as the effects on resources and the tragic loss of lives, challenge us to consider the future course of management in the Northern Region.

Smokey's 50th Birthday Too Many Candles?

Almost 2,000 fires! Just under 195,000 acres... 1994 not only marked the 50th birthday of Smokey Bear but also a fire season that produced almost twice the number of average annual fire starts.

After decades of excluding fire from ecosystems dependent on fire for their renewal, heavy fuel accumulations coupled with lighting storms, high temperatures, low humidity, dry fuels and winds provided the ingredients for potential disaster. The difference between disaster and what occurred in 1994 was a combination of aggressive and effective intial attack, well founded suppression priorites, and good old-fashioned luck!

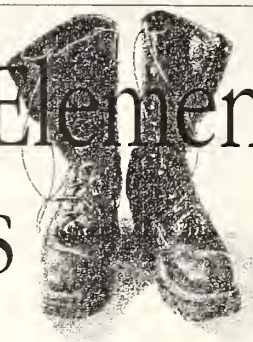
The following tables illustrate the results:

Fire Acres and Total Acres by Management Area Category*

Description	Burned Acres	Total Acres
Wilderness	33,724	7,294,753
Special Management Areas	787	398,037
Non-intensive Forest & Range	37,542	6,150,674
Concentrated Recreation Mgt.	269	178,249
Intensive Forest Management	40,300	11,044,759
Intensive Range Management	1,164	1,667,494
Intermingled Public/Private	0	0
Concentrated Development Areas	0	53,832
Private Lands	5,034	2,222,668

* *Groupings of similar management areas between National Forests.*

The Human Element of Fighting Fires



The number of fires and acres burned are not the only noteworthy figures generated by this fire season. Preliminary numbers show the 1994 fire season to be a demanding year for people and supplies as well.

For sheer number of people, the big day was August 29 when 10,000 firefighters and overhead (Federal and State agency people and the military) were battling blazes in Region One. During the course of the fire season, the Northern Rockies Coordination Center dispatched a total of 8,000 overhead personnel and 919 crews (averaging 20 people per crew) to fires both in and out of the Northern Region. Backing up those people were air tankers which dropped over 4 million gallons of retardant.

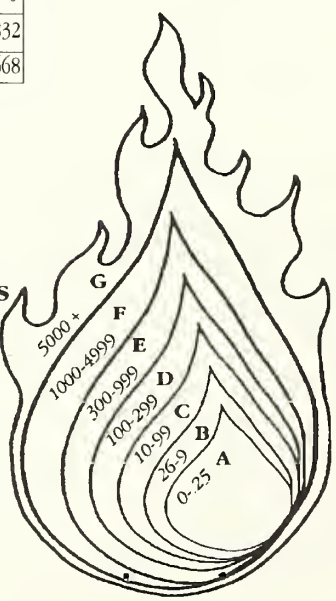
Along with the people and equipment normally available, we also brought in hundreds of crews, 11 airtankers, 96 helicopters, 7 lead planes and 4 MAFFS (Mobile Airborne Fire Fighting System) planes. Hundreds of retirees also returned. We had jobs for everyone from tool sharpeners to structural protection specialists.

At times, with fires burning all over the West, our orders for equipment and people became a wish list. Our wishes were fulfilled from all across the country and beyond. The fire cache in Missoula filled 3,322 orders alone. In comparison, during 1988, they filled 3,191 orders and in the wet year of 1993 only 436 orders were placed. The 1994 orders translated to 3,856,967 pounds of equipment and supplies shipped to the various fire camps. Not figuring the accountable property such as chainsaws, generators and Mark III pumps, the value of the items shipped came to just over $23 million.

Some of the more popular items requested from the cache (not counting those included in camp kits) were 34,577 yellow sleeping bags, 23,716 pulaskis, 14,636 shovels and 490 space heaters. The biggest shortages came from the water handling items such as hose, reducers and gated Ys.

Besides the States in the Northern Region, the Missoula fire cache also supplied Arizona, New Mexico, Colorado, Oregon and Washington, where the fire season started ahead of ours.

Size Class Definitions



Fire Numbers and Size Class*

Size	Number of Fires	Acres
A	1,269	217.51
B	479	1,265.54
C	108	4,391.30
D	39	6,708.00
E	42	25,561.00
F	36	66,249.00
G	9	89,828.00
Total	1,982	194,220.35

* *Fire numbers and areas for National Forest lands only.*

Burned Area Rehabilitation

Rehabilitation work often begins while fires are still burning out of control. Resource Coordinators are assigned to fire teams to ensure that impacts to natural resources are considered - and minimized - while the fire is being fought. Considerations are given to length of handline, placement of dozerline, roads used as fireline, helispots constructed, erosion potential, soil type and fire camp locations.

As firefighting efforts wind down on any given fire, steps are immediately taken to begin rehabilitation of the burned area. Hand lines on slopes make good chutes for the runoff so waterbars are used to slow the flow. Slopes may be recontoured, soil replaced, slash scattered, and roads returned to their original condition. Work may also include seeding and fertilizing the soil. Where necessary for the safety of workers or recreationists, snags are felled.

One method of protecting steep slopes from erosion is the placement of Curlex, a light green netting entwined with aspen shavings. The mat is rolled down the hills, providing a seed bed and holding in soil moisture. The netting will decompose. Other methods include the use of straw bales in front of culverts to strain any sediment, spray seeding of slopes, or placing extra culverts under the roads. On hillsides, timbers placed in a stairstep pattern slows runoff and provides for better absorption into the soil. Special efforts are made while fighting fires within wilderness or wilderness study areas. Crews use M.I.S.T (Minimum Impact Suppression Tactics) to further minimize soil disturbance and evidence of human presence.

Fires also present the opportunity to enhance certain aspects of the forest ecosystem. These opportunities include watershed improvement, enhancement of wildlife habitat and fuel reduction. As with other aspects of the fire season, rehabilitation actions are viewed within an ecosystem management landscape context rather than as a site-specific project.

Designing Salvage Sale Proposals

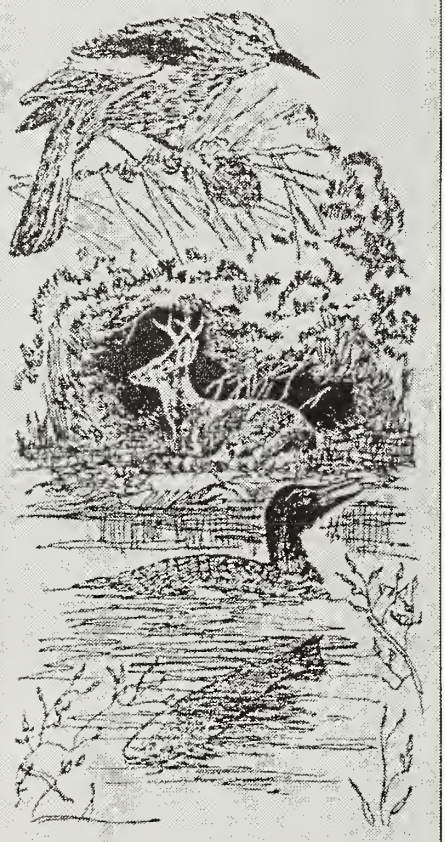
Proposals to salvage timber following fires are being designed using ecological principles and direction in Forest Plans. Both large and small scale salvage sales are being prepared and will minimize effects to resources.

Projected salvage volumes vary widely from forest to forest but have been designed consistent with the Region's post-fire strategy. Although 194,220 acres of National Forest were burned in the Region, not all burned areas will be proposed for salvage sales.

Issues related to salvage projects include: access, appeals, wilderness, roadless areas, watershed impacts, grizzly bear habitat, sensitive species, public support and personnel requirements. Here's what the forests have proposed:

National Forest	Fire-Damaged Forest (acres)	Estimated Salvage Volume (mmbf)	Estimated Sale Date
Clearwater NF	2,534	3.2	1995
Gallatin NF	3,668	0.3	1995
Idaho Panhandle	2,600	0.2	1995
Lolo NF	3,036	3.7	1995
Flathead NF	8,900	13.0	1995
Bitterroot NF	4,150	1.0	1995
Kootenai NF	43,056	65 - 150	1996
Lewis and Clark NF	700	0.7	1995
TOTALS	68,644	77.1 - 172.1	

Resource Considerations



Information on this page is taken from the 1994 Northern Region Post-Fire Evaluation and Characterization Report Compiled by Tom Rhode, Forest Assessment and Planning Staff

Forest Health

"A forest in good health is a fully functioning community of plants and animals and their physical environment. A healthy forest is an ecosystem in balance."

Monnig and Byler (1992)

Healthy forests are in a continuing state of change. Disturbance factors such as fire, insects and disease can accelerate and influence the direction and rate that change occurs.

Fire can be looked at as a starting point along successional pathways. The directions these pathways lead, and the rates they proceed are significantly influenced by insects and diseases. The roles these agents play in influencing forest succession are a function of stand and site conditions, species composition and structure, and extent and intensity of fires.

A number of factors that influence the ability of individual trees to survive the effects of fire are:

1. Site and vigor — Trees that are old, slow growing or on poor sites have the lowest probability for survival.

2. Season in which the fire occurs — Conifers are least susceptible to fire damage when the fire occurs late in the season.

3. Percent of crown scorch and/or crown consumption — The amount of damage to buds, twigs, and foliage is critical. For example, ponderosa pine may have severe foliage injury, but only slight damage to buds and twigs.

4. Extent of cambium damage — Cambium killing, which extends up the bole several feet, reduces the chance of tree survival more than injury near the ground.

5. Presence of insects.

6. Soil moisture during the season following the fire.

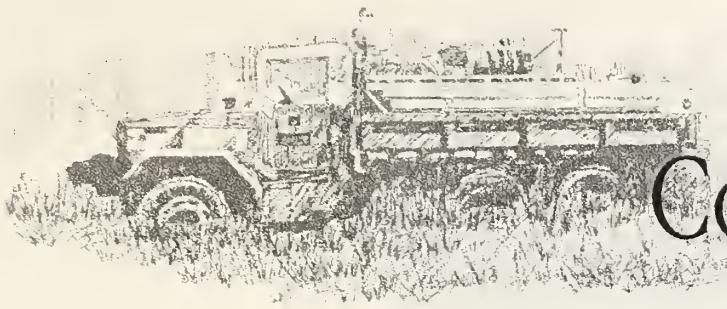
Wildlife

Wildlife in the Northern Rockies evolved with fire and therefore, the occurrence of fire should not be viewed as a catastrophe from a wildlife perspective. In fact, when viewed from the standpoint that roughly 99% of the Region did not burn and that there is a large group of species that benefit from fire, the results of this year's fires can be viewed in a positive light.

Consider the situation by looking back in time at historical patterns that shaped the current vegetation, and looking ahead in time to ascertain how this fire season will shape future vegetation. Also consider the effects on several scales. Locally, site specific fire effects may cause immediate, short term changes for some species (for example, loss of a nest tree, forage loss for a season, or cover loss). At the mid-scale, changes may reflect the pattern of vegetation within a drainage and be expressed as a new source of seeds for some bird species; modification of cover: forage ratios on summer range for ungulates; or a source of stressed trees for beetles which will attract woodpeckers and a host of secondary bird species. At the large scale one must look at how these fires fit into the existing mosaic of vegetation across the forest and determine how they contribute to the maintenance of diversity. Especially at the large scale, fire can be seen in its most elemental form— as an ecological process that shapes the flora and fauna across the landscape over time.

Water

Simply by removing vegetation, fires have the potential to significantly affect an aquatic ecosystem. Vegetation influences the amount of water that reaches the ground, and how much water is absorbed by the soil. When vegetative cover is reduced or eliminated by wildfires, the amount of water that reaches the ground - and the resulting surface runoff - are increased. Without the protection of the vegetation, the increased flows can result in increased soil erosion and a reduction of the quality of water because of increased sediment levels. On the positive side, trees killed by the fire fall into the streams adding large woody debris that provides habitat and regulates gravel movement within the channel. Eventually, the timing of flows and quality of water return slowly to pre-fire conditions as the vegetation recovers.



Social Considerations

We traditionally think of our response to fires in terms of concerns and actions relating to the resources. Increasingly, we must also respond to social considerations such as smoke management, acceptance of prescribed fires, and managing fires within the wildland-urbanl interface.

Smoke Management

....if you were in western Montana or northern Idaho this past summer, you probably remember a few days when the smoke looked so thick it was difficult to see through.

Forest-fire smoke contains many light, tiny particles which can make breathing more difficult and the skies look hazy. During the most intense segments of the 1994 fire season, the Montana Air Quality Division issued daily press releases of particulate concentrations and the precautions people should take. People with respiratory problems were especially affected during these segments. Generally though, the hazy skies looked worse than they were based on the particulate standard the Division uses to protect public health.

Research indicates that historically, fires burned through the northern Rocky Mountains ecosystem more frequently and intensely than they do today. Consequently, smoke was a part of these ecosystems. With the advent of fire suppression, however, we came to expect air free from smoke. Now as a society, we must learn to balance our desire for clean air with the long term need for fire and, therefore, smoke in these ecosystems. It is a balance that will likely rely on tradeoffs in timing and duration between wildfire and prescribed fire and the smoke they produce.

Wildland - Urban Interface

There are many social patterns that are affecting how we manage wildland fires. One of the most significant of these is the growing number of private homes along the interface between wildlands and residential areas.

Land management agencies, State and local governments and the public must come to an understanding of the risks of building in forested areas, the responsibilities that go with living in the woods, and the role each must play in fire prevention and protection.

The importance of public information and involvement in "urban interface" issues cannot be emphasized enough. The Montana Department of State Lands has an excellent set of brochures on the issues of wildland fires and making homes more fire safe. The Forest Service will continue to coordinate our wildland firefighting skills with the structural protection expertise of State and local agencies.

Prescribed Fire

After the 1910 blazes roared through Montana and Idaho, fire suppression became an important Forest Service mission. Within the last few decades, we have begun to realize that the repercussions of this highly effective effort are not all positive. Excluding fire from the landscape has contributed to a build up of fuels on the forest floor and a loss of biodiversity.

Prescribed fires, or controlled burns, offer the option of reintroducing fire in a small - and managed - manner. Burning takes place under very specific conditions and with specific objectives in mind.

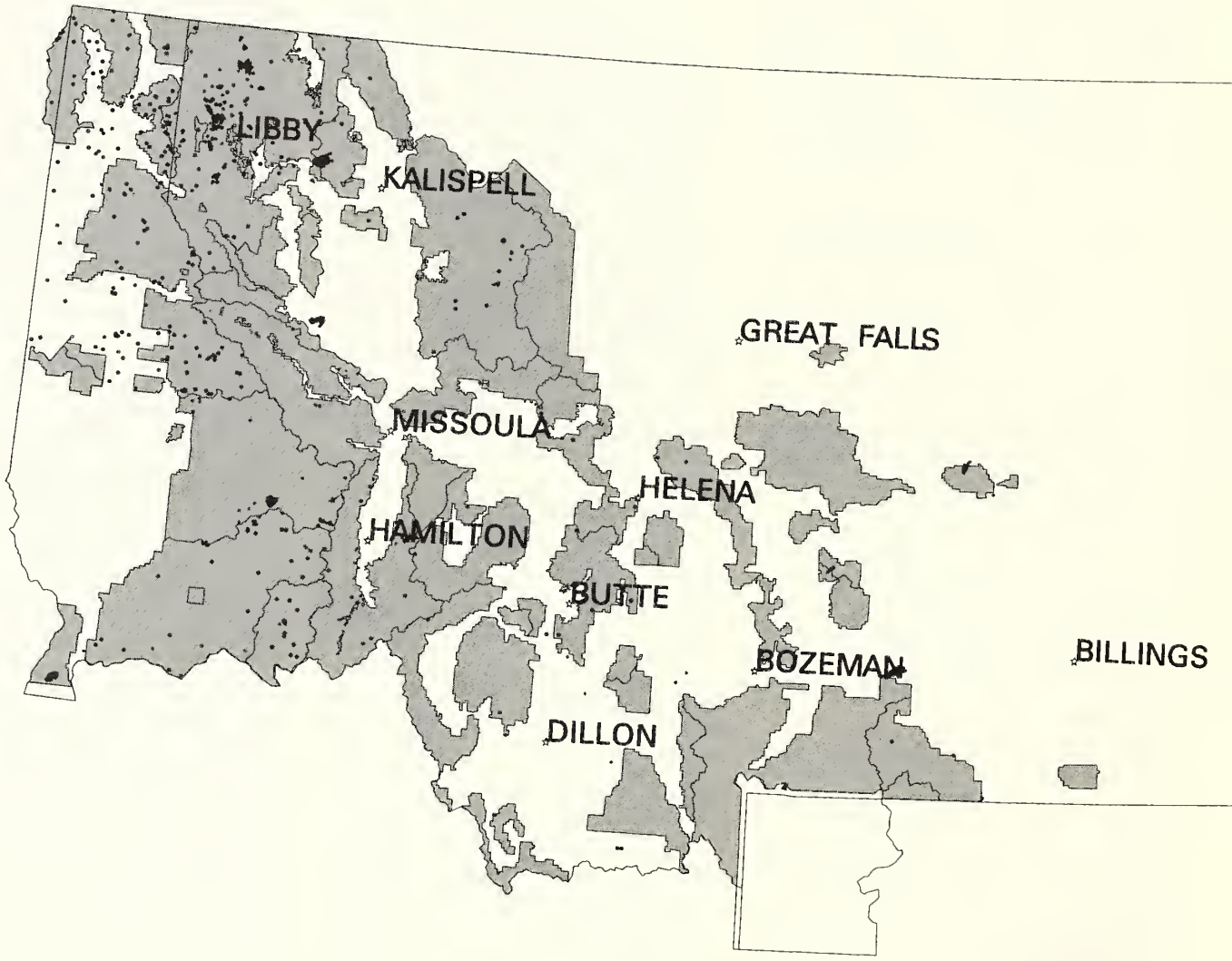
It is often unnerving for nearby wildland - urban interface residents to watch us intentionally start such a burn. And occasionally, these fires do burn far hotter or more acreage than was intended - particularly when conditions, such as winds, change suddenly. However, many residents witnessed the value of controlled burns this summer. As wildfires swept across the landscape, the rate of travel slowed considerably when fires encountered areas that had been treated by prescribed fire within the past few years.

United States
Department of
Agriculture

Forest
Service

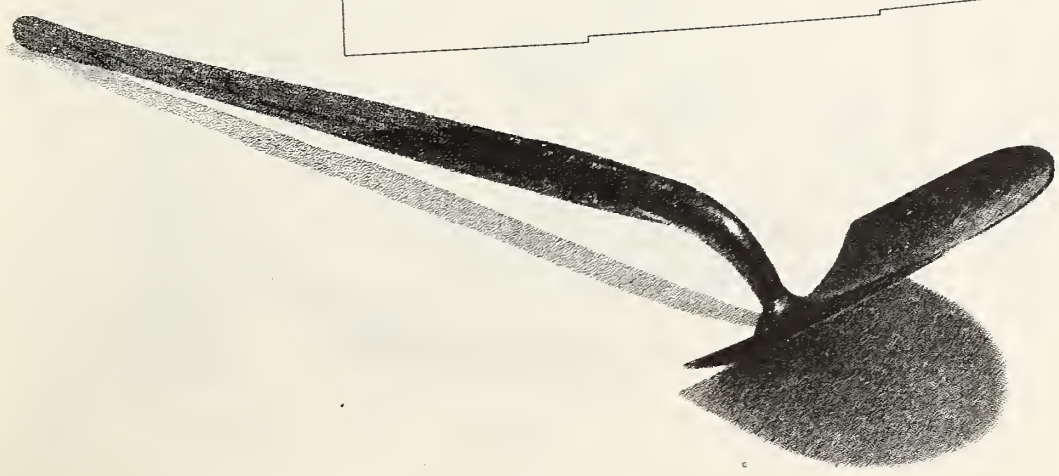
1994 Fires

Northern Region



Size Class A - D fires
represented by dots

Size Class E - G
shown as approximate
perimeters



INTERAGENCY COORDINATION

Perhaps above all else, it is the camaraderie and shared sense of accomplishments and losses, and appreciation shown to firefighters by school children and neighborhood residents that motivate us to tackle firefighting with such a passion.

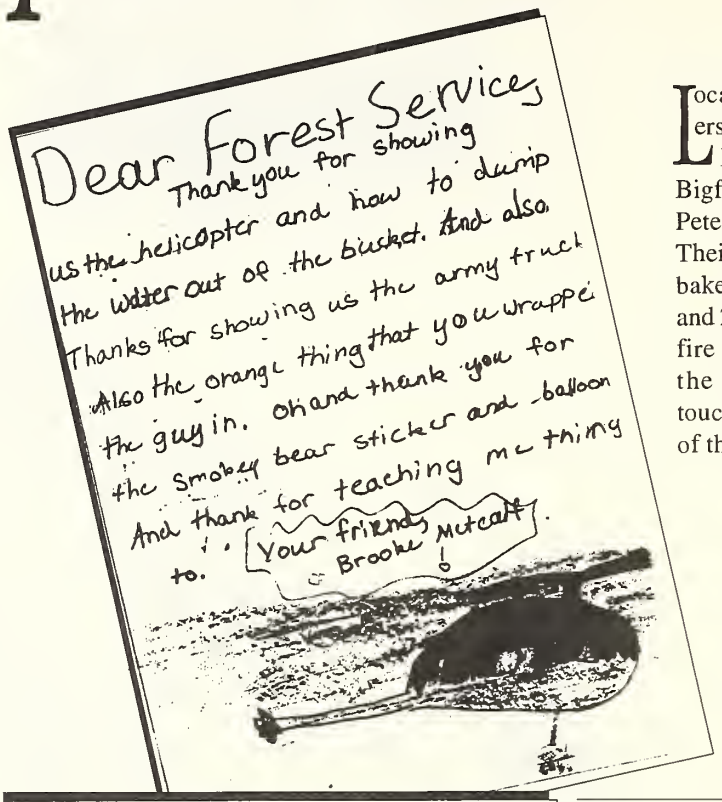
The Forest Service entered the 1994 fire season while trying to adjust to an unusually high number of retirements precipitated by the buyouts offered earlier in the spring. The retirements of some of our most experienced fire managers created an unanticipated challenge as the agency tried to respond to the demanding fire season. Our ability to work with experienced fire managers from other agencies proved crucial to the success of our season.

Land management agencies have established a common Incident Command System (ICS) which provides great efficiencies in training, organization and managing responses to a variety of unexpected situations. Wildland firefighting is the most common type of incident in the Northern Region which agencies respond to cooperatively.

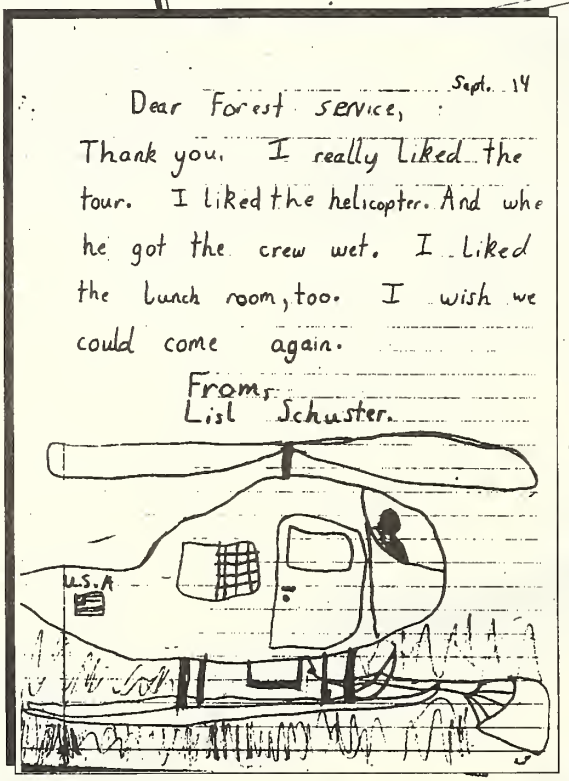
Through the ICS, we combine resources to most effectively tackle a wildfire. It is not uncommon to see Incident Management teams with a mix members representing almost every one of the cooperative State and Federal agencies. Some of those include: the Montana Department of State Lands, Idaho State Lands, the Bureau of Land Management, U.S. Fish and Wildlife Service, Bureau of Indian Affairs, the National Park Service, the National Weather Service, the Montana Department of Fish, Wildlife and Parks, and the State Department of Emergency Services.

On the Ninemile Wildfire Complex west of Missoula, a fireline was tied together when a handcrew from Alaska met up with one from Puerto Rico. Idaho and Montana National Guard units stepped in with their troop transport equipment and personnel when school buses, used for transporting crews, were redirected for transporting school children in September. Marines and Soldiers came from Texas and Washington to assist when it appeared that we had exhausted all of our traditional fire fighting resources. Such are the examples of people from various backgrounds, cultures and organizations joining forces for a common mission.

Others, without whom fire season may have been a lot severe, include the people who provided structural protection. From the Wisconsin State foam units to the local volunteer fire departments, hundreds stood guard over homes. Many of the volunteers left their "real" jobs to fight fire. The 1994 fires definitely proved that the Incident Command System could mobilize people and resources from all over the country. Even the military was impressed.



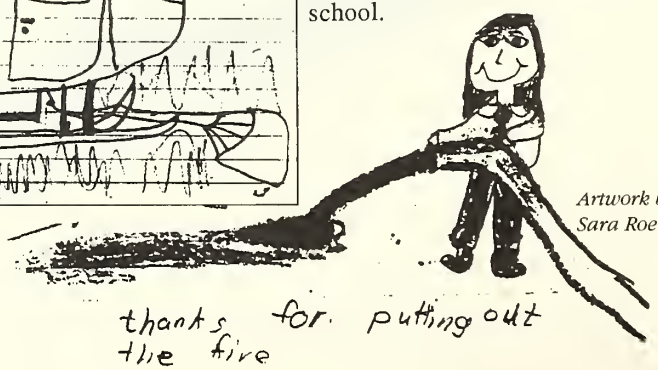
Local 2nd and 3rd graders from the Mountain Brook School of Bigfork, MT visited the Peter's Ridge fire camp. Their parents and others baked dozens of cookies and 200 cupcakes for the fire fighters. Those in the fire camp were touched by the kindness of the local community.



"Remember! If you know in your heart that you are doing your best then that's all what matters."

from a thank you letter to the Mountain Brook Second Graders by Hot Shot crew member Michael Peitzs.

These letters represent just a small portion of the appreciation from Miss Beley's 3rd grade class from the Big Timber, MT elementary school.



Artwork by Sara Roe.

FIRE and ECOSYSTEM MANAGEMENT

Wildland Ecosystems are always changing and fire is one of the major agents of change in the renewal of ecosystems.

Fire has always been and will always be a part of northern Rocky Mountain ecosystems. Every year there are approximately 1000-1200 lightening caused ignitions that occur on National Forest System lands in Region One. Historically, these free burning fires played an important role in shaping and changing vegetation. In this process fire also had many direct and indirect effects on wildlife, water, soils, fisheries and other resources.

It is not humanly possible to completely remove fire from northern Rocky Mountain ecosystems. The nature of its impact can be modified, however, when natural frequencies are upset through programs like fire suppression. One way or another, however, fire will continue to create changes in the ecosystems.

Fire suppression has a place in wildland management.

There may be some fear that the importance of the fire suppression capability of the Forest Service may be compromised. We have developed a very effective interagency fire suppression program since the early 1900's. The program has evolved through varying management emphasis including the "10:00 a.m. policy" where the objective for every wildfire was to control it by 10:00 a.m. the morning after its discovery.

Today we are able to suppress wildfires using the most cost efficient strategy of least cost plus loss. In addition, the agency has a very active management ignited prescribed fire program and it can utilize unscheduled ignitions (prescribed natural fires), in certain preapproved areas. In order to implement these prescribed fire programs and to meet current management suppression policies, qualified personnel with good suppression training and experience are needed. This has reinforced the need for a strong fire suppression organization.

Specific objectives for our fire suppression program include:

- To provide a cost-efficient level of wildfire protection commensurate with the threat to life and property and commensurate with the potential for resource and environmental damage based on hazard, risk, values, and management objectives.

- Consistent with land and resource management objectives, to minimize the sum of (a) the fire program cost, plus (b) the net change in the value of planned resource outputs due to fire. To protect, maintain, and enhance the production and quality of resources through fire protection and use of prescribed fire.

Fire exclusion has an environmental cost.

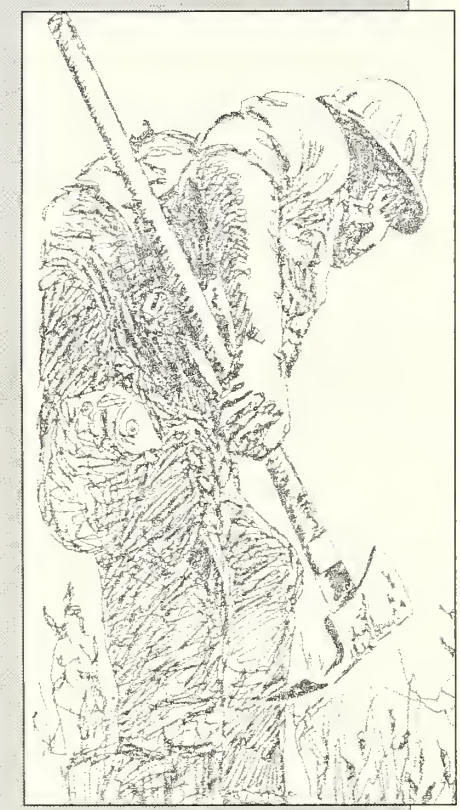
The environmental costs incurred from a policy of fire exclusion can be an artificial advance of forest succession in some fire regimes. This can result in dense thickets of small, slow growing trees in what were once open stands of large trees; extensive forest mortality from insect and disease epidemics; loss of seral tree, shrub, and herbaceous species important for natural diversity and wildlife habitat; and heavy fuel buildup leading to larger more severe wildfires. The change to the ecosystems can alter the numbers, locations and species of both plants and animals that inhabit an area. The larger more intense wildfires that eventually will occur are expected to result in more significant impacts to water, soil and air resources.

Acheiving ecosystem management objectives through the use of fire generates social trade-offs.

Forest and grassland ecosystems are constantly changing regardless of the management actions that take place. Our control over the rate of change is bound by the limits established in the development of a desired condition. This desired condition must be acceptable from a biological/ecological viewpoint and it must also meet the intent of law, policy and agency direction. Actions to achieve the desired condition are constrained by the public's perception of social, economic, and environmental trade-offs. The two most prominent issues at this time are smoke and personal risk, but aesthetics are also a concern.

FIREFIGHTING and What History Tells Us

by Ed Heilman, Retired Former Director, Region 1 Aviation and Fire Management



The 1994 tire season will probably join many others of historic note: 1871, 1910, 1929, 1934, 1949, 1956, 1967, 1988, and many others too numerous to list. Some were notable for large burned acreages, others for high costs, and others for the loss of human life. The one factor that distinguishes 1994 from all the others is its immediacy—it just happened, and our memories of this summer's events are far sharper than those of a more distant past. However, a knowledge of history can improve our perspective if we will but look.

The disastrous fall 1871 fire season in the Lake States was marked by a staggering number of fatalities. Although accurate figures are not available, over 2,200 people were known to have died just from the Peshtigo and Humboldt fires in Wisconsin. Undoubtedly some of those who lost their lives were firefighters. The 1910 fires in this region were known to cost 85 lives, nearly all firefighters. The October 1933 Griffith Park fire in Los Angeles claimed the lives of 26 firefighters, even though the fire was only 47 acres.

The current popularity of the late Norman Maclean's book, "Young Men and Fire" has given the August 1949 Mann Gulch fire tragedy in the Helena National Forest a much wider public interest. The more recent July 1994 deaths of 14 firefighters near Glenwood Springs, Colorado, has caused much private, public, and agency concern.

So what has come of all these and many other fire tragedies'? In some instances both public and governmental attention can be both cyclical and all too shortlived. Winter rains sometimes tend to wash away fire season concerns.

In other cases, really significant changes have taken place. The 1910 fires were the real test of the 1908 deficit financing act for emergency fire funds, today known as FFF. This funding process permitted resources to be allocated to firefighting unencumbered by financial restraints. Congress sustained the 1908 act, even with the 1910 jolt. The 1934 fire season resulted in the 1935 implementation of a new fire control policy which came to be known as the "10 a.m. policy." It had as its goal fire suppression by 10:00 a.m. following the report of a fire or at least to have sufficient resources apportioned by that time to achieve control.

The 1956 fires, most notably in southern California, resulted in major strengthening of Forest Service fire safety practices—the newly proclaimed 10 Standard Firefighting Orders, organized and widely distributed fire behavior and other fire training, the development of protective clothing and fire shelters, the beginnings of the national—eventually interagency—fire qualification system (red cards), and other changes. Other fire events have resulted in other greater or lesser changes.

Despite the technical advances made in firefighting, we are faced with the fact that firefighting remains an inherently hazardous occupation. Firefighters cannot be made absolutely fireproof any more than soldiers or police can be made bulletproof. David Godwin, one of the most astute Forest Service fire leaders, who later became the fire director in the Chief's office, said in 1937, "In man's control of forest fires some accidents will occur— just as in city fire protection—without fault or failure on the part of anyone."

Despite the fact that accidents will assuredly happen with the best of training and preparedness, it will be in all our best interests, as our predecessors did before us, to understand thoroughly, apply diligently, and persist in applying the remedies that come from the 1994 fire season and the many previous fire seasons which have a story or a lesson to tell us.

The fire season of 1994 is being described in many ways; it was, above all else, tragic. Twenty-four people lost their lives while fighting fires and protecting homes and natural resources. Four of these fallen firefighters were from Montana or died while fighting fires in Montana.

Wildland firefighters are special people and respond to a very unique need in our country. Their tasks are demanding physically, mentally and emotionally. We cannot remember the fires season of 1994 without paying tribute to these people.

Robert E. "Bob" Kelly, 57, pilot for Neptune, Inc., Alamogordo, New Mexico, was killed in the crash of a slurry bomber (P2V Neptune) July 29, 1994 during a retardant drop on a wildfire on the Ninemile Ranger District, Lolo National Forest, about 30 miles west of Missoula, Montana.

Kelly and co-pilot Randy Lynn, Missoula, were killed when the slurry bomber crashed on a ridge on Squaw Peak (7,990 feet), on the boundary between the Ninemile Ranger District and the Flathead Indian Reservation.

A native of Mankato, Kansas, he joined the U.S. Army in 1954, after his graduation from Mankato High School. He completed flight training in Albuquerque and started his flying career operating Kelair Flight School and working for Land-Air in Socorro, New Mexico.

Kelly started flying slurry bombers 1976 for Black Hills Aviation in Alamogordo. When Neptune, Inc. purchased Black Hills Aviation, Kelly became Neptune's Director of Operations and Chief Pilot. Among other qualifications, Kelly was certified as an instrument flight instructor, A & P mechanic, aircraft inspector, and he held a multi-engine pilot rating.

He was a member of the B.P.O. Elk Lodge 1897 and the American Legion. Kelly piloted many of the Rotary Club's medical flights to Mexico.

Kelly is survived by his wife, Beth, daughter, Anne-Marie, son, Kenneth, grandson, Kody, all in Alamogordo, and son, Mike, in Bullhead City, Arizona.

Randy Lynn, 44, of Missoula, died on July 29, 1994 from injuries sustained in a plane crash while fighting the Butler Creek Fire near Squaw Peak.

He was born Dec. 6, 1949 in Clearwater, Idaho to Clifford and Gertrude Lynn. In 1968, he graduated from Clearwater Valley High School where he was active in football, track, and wrestling. He joined th U.S. Army and served as a paratrooper for the 82nd Airborn Division in Vietnam. He was involved in the aviation industry all of his adult life, working as a mechanic, inspector and pilot. He flew in Alaska, Mexico and most of the continental United States.

Randy was a co-pilot, flying for Neptune, Inc., of Alamogordo, N.M. fighting fires. He was dumping fire retardant on the Butler Creek Fire when he died.

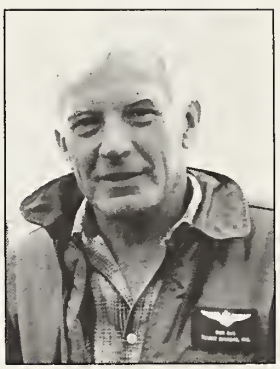
Randy enjoyed hunting, camping and spending time with his children and grandsons. He was respected and loved by all who knew him.

His parents preceded him in death. Survivors include three daughters and two sons, two grandsons, two sisters, two brothers and a half brother.

Don Mackey, 34, of Hamilton, MT, died on July 6th, while fighting a forest fire near Glenwood Springs, Colorado. At the time of his death, he was trying to lead his crew of firefighters to safety. Many have stated that it is appropriate to remember Don by this example of his generosity and willingness to help others, as reflected by his actions as he died.

Born in Sacramento, California, Don moved with his parents to the Bitterroot Valley in 1968. He began his firefighting career on the Sula Ranger District of the Bitterroot National Forest in 1985. He worked on a temporary basis for two seasons before joining the Darby District in April, 1987. Don became a smokejumper in June, 1987.

Don is survived by his daughter and son, his mother and father, three sisters and his maternal grandmother. He is also survived by lasting memories of a young man who loved the out-of-doors.



Bob Buc On August 13,1994 at approximately 2:30 p.m. Montana time, a C-130 air tanker, #82, carrying 3000 lbs. of retardant, on its way to a fire in southern California, exploded in mid air instantly killing its entire crew. The pilot was Bob Buc of Lolo, MT. co-pilot, Joe Johnson of Florida; and Engineer, Sean Cirumba of California.

Bob had flown tankers for applroximately 18 years after an exciting career as a Navy carrier pilot with more than 500 carrier landings to his credit. During his Naval career he was also a flight instructor and while flying tankers was the "captain" who taught and checked out numerous pilots hoping to qualify for their initial attack cards. It was a privilege to fly in the "right seat" with Bob.

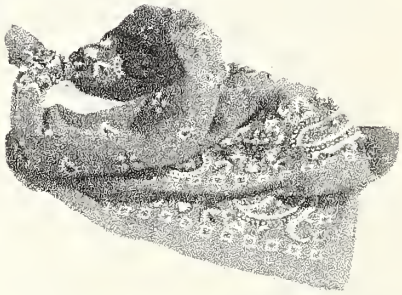
Bob had lived in Montana for 14 years, 7 of which were in Lolo. He was very active in search and rescue, donating many hours to the refurbishing of their rescue bus.

He left behind his companion, Margaret Richardson of Lolo, his mother and a brother, William in Michigan, a brother Jerry in Texas, 3 children and 3 grandchildren, all of Southern California.

Bob Buc was a strikingly handsome man with a warm, winning smile. Highly intelligent with a curious mind, he loved a good joke, action, fun and rum and coke. He loved a challenge and was a strong and confident leader, but he also had a shy private side.

He loved to garden, tinkering with machines, muscle cars, country music and women who could fix their own flat tires. He was an outstanding cook. His specialties were fixing Sunday brunch and elk steaks on the bar-b-cue.

Forest Service Chief Jack Ward Thomas, clad in fire-fighter Nomex, is about to congratulate Shari Young, a switchboard operator for the Flathead National Forest. Ms. Young had fielded hundreds of telephone calls from concerned residents of the Flathead when the Little Wolf Fire threatened to overrun residences in the Star Meadow area west of Whitefish. Chief Thomas has just finished a two-day tour of major fires in Northwest Montana.



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In this Issue:

Time of Transition

1994
Post Fire
Response

A Special Edition Summarizing the 1994 Fire Season